

**Tetra Tech, Inc.**

4213 State Street, Suite 100
 Santa Barbara, CA 93110-2847
 VOICE (805) 681-3100 FAX (805) 681-3108

Project: **Vandenberg Air Force Base IRP**Log of Well No. **40-MW-2**Location: **OU4, Site 40, SLC 1W, at pipe outlet on northwest end of launch pad.**

Date Started: 12/28/93 Completed: 12/29/93

Logged By: J. Bonebrake Checked By: **J. R. Steele, R.G., C.E.G., C.H.G.**Drilled By: R. Glaze, S/G Testing **J.R. Steele, R.L. #5963**

Drilling Equipment: CME 75, 8"/10" HSA

Sampling Equipment: 2" ID Split Spoon Sampler

GS Elev.: 116.1 ft above MSL TD: 79.0 ft. bgs

4" PVC Blank Casing: from 0 ft bgs to 67.5 ft bgs

0.020" Screening Casing: from 67.5 ft bgs to 77.5 ft bgs

Bentonite/Cement Grout: from 2 ft bgs to 62.5 ft bgs

Bentonite Transitional Seal: from 62.5 ft bgs to 65.5 ft bgs

#3 Sand Filter Pack: from 65.5 ft bgs to 79 ft bgs

TOC Elev.: 119.01 ft above MSL

Depth (ft. bgs)	MATERIAL DESCRIPTION	Material Symbol	Material Type	Well Construction	Sample	Blow Counts per 6"	Percent Recovery	PID (ppm) Amb/Smp	REMARKS
	concrete, fill.								
	sand, 50 percent pale brown (10YR 6/3), 30 percent gray (10YR 5/1), and 20 percent yellowish brown (10YR 5/8), fine to medium grained, well sorted, medium dense, slightly moist, subangular to round, trace coarse sand, trace fine angular gravel, dune sand.		SP			3	67	0.0/8.9	Start 0820. Sample V40MW2-0 sent for chemical tests.
	at 2 ft., pale brown (10YR 6/3), slightly moist to moist.					5			
						6			
						4	100	0/18	Sample V40MW2-2MS sent for chemical tests.
						7			
						11			
5	light yellowish brown (10YR 6/4), trace fine grained gravel, subround to round, dense, moist.					12	100		Sample V40MW2-5 and V40MW2-6 (replicates) sent for chemical tests.
						17			
	same, except pale brown (10YR 6/3).					19			
						17	100	0/5.9	
						21			
						27			
10	light yellowish brown (10YR 6/4), trace angular to subangular grains, very dense.					20	100	0.0/19	Sample V40MW2-10 sent for chemical tests.
						24			
						29			
15	10 percent yellowish brown (10YR 6/8), very moist					21	100	0/3.9	Sample 40MW2-15 sent for physical tests.
						30			
						38			
20									

74.0 ft. bgs. Groundwater depth during drilling

73.9 ft. bgs. Groundwater depth after well development on: 2/18/94

TC Number: 7001-41

TETRA TECH, INC.

Continued Next Page Page 1 of 4

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Depth (ft. bgs)	MATERIAL DESCRIPTION	Material Symbol	Material Type	Well Construction	Sample	Blow Counts per 6"	Percent Recovery	PID (ppm) Amb/Smp	REMARKS
20	pale brown (10YR 6/3), and yellowish brown (10YR 5/4).		SP			32 34 41	100	0/2.0	
25	yellowish brown (10YR 6/4), very fine grained, moist to very moist.					23 28 31	100	0/3.7	Sample V40MW2-25 sent for chemical tests.
30	pale brown (10YR 6/3), with 5 percent yellowish brown (10YR 5/8), fine to medium grained.					21 27 34	100	0/0	
35	light yellowish brown (10YR 6/4), slightly moist to moist.					20 23 30	100	0/0	
40	light yellowish brown (10YR 6/4), with 5 percent yellowish brown (10YR 5/8).					44 29 36	100	0/1.9	
45									

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45			SP			21 27 31	33	0/0	
50	50 percent yellow brown (10YR 5/8), 25 percent pale brown (10YR 6/3), 20 percent very pale brown (10YR 8/2), 5 percent black (10YR 2/1), trace medium sand-size shell fragments.					6 16 24	100	0/7.1	PID readings duplicated with exact results. Sample V40MW2-50 sent for chemical tests.
55	90 percent pale brown (10YR 6/3), with 10 percent yellowish brown grains (10YR 5/8), fine grained, trace medium grained.					9 13 24	100	0/0.8	
60	50 percent yellow brown (10YR 5/8), 25 percent pale brown (10YR 6/3), 20 percent very pale brown (10YR 8/2), and 5 percent black (10YR 2/1), fine to medium grained, trace shell fragments.					16 24 31	100	0/1.8	Sample V40MW2-60 sent for physical tests.
65	same, except no shell fragments.					11 18 30	100	0/0	Sample V40MW2-65 sent for chemical tests.
	sand, dark yellowish brown (10YR 3/4), fine grained, minor silt, trace medium sand, well sorted, subround, dense, moist, dune sand.		SP-SM						
70									



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Depth (ft. bgs)	MATERIAL DESCRIPTION	Material Symbol	Material Type	Well Construction	Sample	Blow Counts per 6"	Percent Recovery	PTD (ppm) Amb/Smp	REMARKS
70	sand, yellow (10YR 7/6), fine to medium grained, well sorted, subround to round, dense, moist, dune sand.		SP			13 21 24	100	0/1.7	
	sandy gravel, fine to course grained, well sorted, angular to subangular, moist, dense, Orcutt Formation.		GP						
75	sand, yellow (10YR 7/6), fine to medium grained, well sorted, subround to round, dense, moist, Orcutt Formation.		SP			23 23 38	100	0/11	Driller reported gravel zone at 73.5 ft. bgs. Sample V40MW2-75 sent for chemical tests.
	sand, yellowish brown (10YR 5/4), fine to medium grained, well sorted, subround to round, very dense, very moist to wet, interbedded in 3-inch layers with; clay light yellowish brown (2.5Y 6/2), with minor fine grained subround to round sand, Orcutt Formation.		SP-SM CL			50 100/4" 50/0"	56		
80	clay, light brownish gray (2.5Y 6/2), with very stiff, moist, moderately fine to coarse grained chert and shale gravel (chert is very dark grayish brown (10YR 3/0), and shale is very pale brown (10YR 8/2), angular and subround), gleyed horizon, weathered Monterey Formation. From 78 to 79 feet--same, except mottled yellow (10YR 7/8), very pale brown (10YR 8/2), and light yellowish brown (2.5Y 6/2). cherty shale, very hard, Monterey Formation.			SHALE					End 1530.
85									
90									
95									